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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Kiyotaka ISHINO et al.

Examiner: R. Sergent

Serial No.: 09/423,523

Group Art Unit: 1711

Filed: July 5, 2000

Title: FILM FOR ACCELERATED COMPOST FERMENTATION

BRIEF ON APPEAL

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Real Party in Interest

The present application is owned by Atofina, successor to ELF Atochem S.A., to which the present application is assigned at reel 10953, frame 0220.

Related Appeals and Interferences

There are no known related appeals or interferences.

Status of Claims

Claims 4-9 and 12-15 are pending, and are all on appeal. Claims 1-3, 10 and 11 have been previously canceled.

Status of Amendments

Applicants' amendment of February 19, 2004, has been *entered*. See item number 7 of

the Advisory Action mailed March 8, 2004.

Summary of Invention

The invention is directed to a method of composting, by providing a heap of compostable matter and covering the heap with a film of a polyether polyamide block copolymer, which film has been engineered to be impermeable to water in liquid form, but permeable to water vapor, oxygen and carbon dioxide gases. See the specification at page 2, the fourth full paragraph.

Issues

The only issue for consideration on this appeal is the rejection of all pending claims under 35 U.S.C §103.

Grouping of Claims

Separate consideration is requested for claims 4-9 and 12-14, which specify particular copolymers, i.e., polyether polyamide block copolymers in claims 4, 6-9 and 12-14, and polyoxyalkylene block polymers in claim 5.

Argument

Claims 4-9 and 12-15 remain rejected under 35 U.S.C §103 over Fleischer '024 or Werenicz '887 or WO '174, each taken with Tesch '327. At the outset, it seems that the rejection is upside down, inasmuch as it employs, as the primary references, three documents which do not pertain to composting. However, these documents disclose water vapor permeable films, used in other areas such as manufacturing of roofing materials or automotive parts. The Office Action then employs, as a secondary reference, a document disclosing composting, but with films which are both different from the presently claimed film, and different from the films of the primary references as explained in greater detail below. Thus, it would seem that the composting reference should be the primary reference, and the secondary references those which disclose water vapor permeable films, in other utilities. In any event, it is not seen that the reverse characterization of the references in the Office Action affects Applicants' arguments. Thus, each

of the three "primary" references discloses films which are water vapor permeable. In particular, Flesher discloses a polyetheresteramide, and water vapor permeable films thereof. Patentees teach that these films are used in "many application[sic] and especially for composite articles and objects provided with such film(s) and intended for contact with the human or animal body." Patentees list, in particular, manufacture of clothing, footwear, adhesive or non-adhesive dressings, or compresses and linen employed in operating units, as well as hardware supports for curative or preventative medications administered subcutaneously. Patentees further indicate that the films may be used in the manufacturing of seats such as motor vehicle seats or under roofing materials in order to increase leak proofing of the roof without retaining moisture. See column 3, lines 20-60.

Werenicz discloses a polyurethane-based film, which is water permeable, and teaches that the film may be used in "applications in which water-vapor permeability is desirable." See column 1, lines 23-26. Patentees teach that these applications include weatherproof clothing and tarpaulins, and "in the construction industry." See column 1, lines 21-24.

WO 96/15174 discloses polyethers used in biodegradable moldings, adhesives, foams and blends with starch. See the abstract.

Thus, as admitted in the Final Rejection, these references fail to suggest the use of their films in the production of covers for composting. In order to remedy this deficiency, the office action relies upon Tesch. However, the films disclosed in Tesch for composting have significant differences from those of the primary references. While the Final Rejection argues that "Tesch advises, but does not necessarily require, that slits within the film be used to control [oxygen or air permeability]," in fact, patentees clearly teach that slitting of the film is *necessary* where gas permeability is desired *in a polymer sheet*. For example, patentees teach that it is "desirable, if not necessary, to appropriately slit the web *to allow appropriate transfer of gases*." See col. 4, lines 58-62. Patentees teach that air permeability "is provided in the *polymeric sheet* by a precisely controlled slitting operation or in the fiber sheet by control of, for example, the degree of compression during fabrication." (Emphasis added.) See col. 3, lines 65-end. The "fiber sheet" is the embodiment which need not be slitted according to patentees, although patentees teach that slitting may be performed on the fiber sheet to *increase*

permeability. See col. 6, lines 65-66. The *fiber sheet*, which is spun-fleece, etc., see col. 6, line 50, is not equivalent to the materials of the primary reference, to the slitted material of the secondary reference or to the materials of the present claims, each of which are polymeric in nature. The only method taught in Tesch to make *polymeric* materials permeable is slitting, to provide *water* permeability (permeability to *both* liquid and vapors). Thus, the teaching that permeability is introduced into Tesch's fiber sheet by producing an open weave form controlling the degree of compression, see col. 3, lines 65-end, is not relevant. Such a compression technique would not be applicable to polymeric webs. Thus, patentees clearly teach that, *for polymeric webs*, slitting is *necessary* to control moisture. Thus, at best, this combination of references would teach slitting of the polymeric films of the primary references, in order to increase gas permeability. However, of course, such slits would render the films permeable to liquid water, and thus the combination of the reference would not result in the presently claimed materials. While it is argued, at page 3 of the Final Rejection, that one of ordinary skill "would have fully realized that the film permeabilities of Tesch can be achieved by the use of the permeable films taught by the primary references, without the need for slitting the films," it is submitted this is, at best, hindsight reconstruction, inasmuch as Tesch teaches that slitting of the films is desirable, *if not necessary*, to achieve appropriate permeability and teaches no other way to provide permeability in the polymeric materials.

Accordingly, the Office Action fails to provide a reason why one of ordinary skill in the art would have motivation to address the very problem of the secondary reference, permeability, by using a film which *lacks* the solution of the secondary reference, the slits. Such a modification is only obvious where the artisan is benefited with the hindsight of the present application, desiring to increase gas permeability while restricting liquid permeability. This motivation is not provided from the combination of the references. Nowhere does the Office Action explain why one of ordinary skill would want to use a polymeric sheet which is water vapor permeable/liquid impermeable. Instead, one of ordinary skill has motivation only to provide both permeabilities, by slitting the polymer, as in Tesch.

Moreover, it is maintained that Tesch and the remaining references are directed to nonanalogous art areas, and would not be combined by one of ordinary skill in the art. As

discussed in the prior response, the test for non-analogous art is set forth in *In re Clay*, 966 F.2d 656, 23 USPQ2d, 1058 (Fed. Cir. 1992), where the Federal Circuit indicated that there is a two step test to determine whether references are combinable. First, one must inquire whether the references are in the same field of endeavor. It is clear that, in the present situation, they are not. As noted above, the primary references disclose clothing, foot wear, adhesive dressings, motor vehicle seats, roofing materials, weather proof clothing, tarplins in the construction industry, biodegradable molding and adhesives, etc. Thus, the primary references are not directed to the specific needs of composting, unlike the secondary reference. It is noted that the mere fact that the primary references are arguably directed to polymeric sheets in which water permeability might be a "concern," is insufficient to place the references in the category of analogous art. For example, in Clay, *supra*, the Federal Circuit found that injecting gel into an oil tank to remove dead space was *not* equivalent to injecting gel into a subterranium reservoir to flush out oil, although it clearly could have been argued (and was, by the PTO), that both references were directed to injecting gel into a space to flush out oil. However, the Federal Circuit found that different concerns would be encountered by artisans in both areas and, thus, the art was not analogous. The same is the situation here, where the primary reference is not concerned with the exacting permeability needs of composting, and the secondary reference is unconcerned with the specific permeability needs of shoes and roofing, etc.

The second portion of the Clay test is whether the references are "reasonably pertinent to the same problem." As can be seen from the about discussion, they are not, in view of the differing concerns in composting versus the other applications enumerated above. No where is it explained why the moisture requirements in clothing, roofing, auto seats, etc. would be common to composting. Thus, it is submitted that the references are directed to non-analogous areas, and would not be combined by one of ordinary skill in the art.

Thus, while it is argued at page 4 of the Final Rejection that the primary and secondary references are analogous in that they are "concerned with the utilization of polymeric materials having gas permeabilities that are suitable for protection from the elements", it is clear that the test set forth in Clay is far more strict than this. Indeed, in *Clay, supra* both references flushed in gel to remove oil. However, the Federal Circuit found that different concerns would be

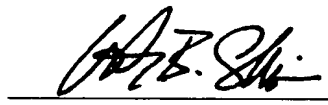
encountered by artisans in both areas. In the present situation, the factors determining whether a compost heap "breathes" successfully are clearly not the same as breathability in clothing, footwear, adhesive dressings or compresses employed in operating units, much less seats for motor vehicles. Thus, Applicants maintain that their argument concerning the non-analogous nature of these references.

Finally, it is submitted that the combination of references, which fails to teach the use of vapor-permeable but liquid impermeable membranes, further fails to suggest the use of any *particular* polymer such as a polyoxyalkylene block polymer of claim 5, or a polyether polyamide block copolymer of claim 4 and its dependents. Thus, these claims are even further patentable over the rejections, to the extent that they pertain to claim 15.

In conclusion, it is submitted that ample basis to overturn the rejections of record exists, and the same is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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FIILED: May 24, 2004

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APPENDIX

Listing of Claims

Claim 1 **(canceled)**

Claim 2 **(canceled)**

Claim 3 **(canceled)**

Claim 4 A method of composting comprising providing a heap of compostable matter and covering the heap with a film comprising a polyether polyamide block copolymer, said film being impermeable to water in liquid form, but having a water vapor permeability thereof at least 300 $g/m^2 \cdot 24h$, an oxygen permeability at least 1,000 $cm^3/m^2 \cdot 24h \cdot atm$ and a carbon dioxide permeability at least 10,000 $cm^3/m^2 \cdot 24h \cdot atm$.

Claim 5 A method according to claim 15, wherein the polymer containing polyether chains is a polyoxyalkylene block polymer.

Claim 6 A method according to claim 4, wherein the polyether polyamide block copolymer is a polymer in which polyoxyalkylene chains are linked.

Claim 7 A method according to claim 4, wherein the polyamide block copolymer contains polyoxyethylene, poly(1,2- or 1,3-oxypropylene), polyoxytetramethylene, polyoxyhexamethylene, a block or random copolymer of ethylene oxide and propylene oxide, or a block or random copolymer of ethylene oxide and tetra-hydrofuran.

Claim 8 A method according to claim 4, wherein the polyether polyamide block

copolymer contains a polyoxyalkylene copolymer with 2 to 4 carbon atoms in the alkylene moiety.

Claim 9 A method according to claim 4, wherein the polyether polyamide block copolymer is a polyoxyalkylene of number average molecular weight 200 to 6000.

Claim 10 **(canceled)**

Claim 11 **(canceled)**

Claim 12 A method according to claim 4, wherein the polyether polyamide block copolymer contains (a) polyoxyalkylene chains linked with (b) polyamide chains which are (i) polymers of aminocarboxylic acids or lactams having at least 6 carbon atoms, or (ii) polymer of dicarboxylic acid salts and diamines with at least 6 carbon atoms.

Claim 13 A method according to claim 12, wherein (a) and (b) are linked via a dicarboxylic acid having 4 to 20 carbon atoms.

Claim 14 A method according to claim 12, wherein (b) is a polymer of 11-aminoundecanoic acid, 12-aminododecanoic acid, caprolactam, laurolactam, a salt of hexamethylenediamine and adipic acid or a salt of hexamethylenediamine and sebacic acid.

Claim 15 A method of composting comprising providing a heap of compostable matter and covering the heap with a film comprising a polymer containing polyether chains as structural units, said film being impermeable to water in liquid form, but having a water vapor permeability thereof at least 300 $g/m^2 \cdot 24h$, an oxygen permeability at least 1,000 $cm^3/m^2 \cdot 24h \cdot atm$ and a carbon dioxide permeability at least 10,000 $cm^3/m^2 \cdot 24h \cdot atm$.